

Study of Auramine-o Poisoning Cases (Synthetic Yellow Cow Dung Powder) in Tertiary Care Center

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Abstract: Introduction: Cow dung known since long ago for its germicidal properties, used by Indian villagers to clean the house premises. As cow dung is not available easily, nowadays people have started using synthetic yellow coloured powder (Auramine-o) available easily in grocery shops locally known as "Morechap powder" in districts of Maharashtra. As the poisoning is rare, very few literatures are available mentioning the detailed mechanism of action, clinical presentation and complications. **Aims and objectives :** To study the clinical features, treatment and outcomes of synthetic yellow cow dung powder poisoning. **Material and methods :** 13 patients presenting with confirmed H/O consumption of (Auramine-o) synthetic yellow cow dung powder poisoning were studied. Patient's routine investigations BSL, RFT, LFT were done. CT brain was done whenever indicated. **Results and Conclusion:** synthetic yellow cow dung powder poisoning was common in young age group and females. Vomiting, respiratory depression were common symptoms. synthetic yellow cow dung powder poisoning was needed only symptomatic treatment. It was very rare and mortality is low when treated promptly.

Key words : synthetic yellow coloured powder (Auramine-o). CT Scan

Introduction :

Cow dung known since long ago for its germicidal properties, used by Indian villagers to clean the house premises. As cow dung is not available easily, nowadays people have started using synthetic yellow coloured powder (Auramine-o) available easily in grocery shops locally known as "Morechap powder" in districts of Maharashtra.

As the poisoning is rare, very few literatures are available mentioning the detailed mechanism of action, clinical presentation and complications.

Aims and objectives :

1. To study the clinical features .
2. To study the response to treatment.
3. To study outcome of (Auramine-o) synthetic yellow cow dung powder poisoning.

Material And Methods

- Study Design: Prospective study
- Source Of Data: The study was carried out in Dr. V.M. Government Medical College , Solapur
- Duration Of Study: August 2016 To March 2017.
- Inclusion Criteria:
 1. Age > 13 yrs.
 2. Patients with confirmed H/O consumption of (Auramine-o) synthetic yellow cow dung powder
- Exclusion Criteria:
 1. Patient not having confirmed H/O consumption

of (Auramin-o) synthetic yellow cow dung powder

2 Age < 13 yrs.

- Sample size - 13 Patients.

13 patients presenting with confirmed H/O consumption of synthetic yellow cow dung powder poisoning were studied. Patient's routine investigations BSL, RFT, LFT were done. CT brain was done whenever indicated.

Table No. 1 Total number of cases and sex distribution

Male	4
Female	9

Table No.2- Age of patients

Age group	No. of patients.
< 20	0
20- 40	9
40 - 60	2
> 60	2

Table no.3-Clinical features of Patients.

Symptoms	No. of cases
Vomiting, Epigastric pain	6
Respiratory Depression	2
Seizures	2
Asymptomatic	5

Table no.4 - Treatment

Symptomatic	11
Antiepileptic	2
Mechanical ventilation	2

Table no.5 Outcome of patients

Discharged	Death
11	02

aspiration with seizures and. Rest were treated symptomatically and discharged.

Cow dung known since long ago for its germicidal properties, used by Indian villagers to clean the house premises. As cow dung is not available easily, nowadays people started using synthetic yellow coloured powder available easily in grocery shops locally known as "Morechap powder" in districts of Maharashtra state. This issue came into light when people started consuming this yellow synthetic cow dung powder due to closure of "Beedi Industry" as it was banned by Government. This study was conducted to know the socioeconomic causes behind this poisoning, its clinical features and treatments. Study was conducted at Dr V. M. Government Medical College and Shri Chatrapati Shivaji Maharaj Sarvopachar Rugnalya, Solapur, Maharashtra. 25 patients admitted with H/o Yellow synthetic cow dung powder consumption from August 2016 to March 2017.

All patients had their clothes and body stained with yellow colour which persisted even at the time of discharge. Among 13 patients studied, 6 had GI symptoms as vomiting and epigastric discomfort, 2 had respiratory depression while 2 had convulsions. Both these patients died within hours after admission to ICU.

Some interesting case details.

Case 1

One female who consumed the yellow synthetic cow dung powder, had bilateral aspiration due to multiple episodes of vomiting. She died immediately after admission to hospital.

Case 2

A 52 year old male who arrived in Emergency department with status epilepticus had her body and clothes stained with yellow colour. She had bilateral aspirations and was intubated immediately due to falling saturation and low GCS. But he succumbed in the Emergency department only even after resuscitative efforts.

Rest of the patients who presented with vomiting, epigastric discomfort and respiratory depression were treated symptomatically. Stomach wash and body decontamination was done in all. Skin as well as body secretions were yellow even after 2 days of treatment. All of them were discharged after clinical improvement.

Discussion -

Total 13 cases were studied. 13 patients presenting with confirmed H/O consumption of synthetic yellow cow dung powder poisoning were studied. Patient's routine investigations BSL, RFT, LFT were done. CT brain was



Observations:

Total 13 cases were studied.
 From table No.1, The commonest age group was 20- 40 years, followed by 40-60 years .
 From table No.2, The commonest sex was female.
 From table No. 3 , Commonest clinical features were vomiting, epigastric pain , respiratory depression , followed by seizures.
 All 13 who were included in study 2 died, Both due to

done whenever indicated.

Because of cheaper cost and easy availability, this poisoning has become popular in last 9 months in Solapur (vidi Gharkul area). The reason was loss of job due to closure of beedi industry by Government. Surprisingly, there are no cautionary labels on the packet. Even though it is legally banned, the poison is widely available in market and no step is taken to prevent it.

Cow dung powder is available in 2 types - Auramine - O (Yellow) and malachite green(Green).¹ Auramine is a neurotoxic poison which causes CNS depression. Centrilobular necrosis due to toxic metabolites leading to severe hepatic damage manifested as jaundice, upper abdominal pain, and vomiting². Auramine being a cationic dye causes severe ocular injury on eye contact and damages the gastrointestinal mucosa on ingestion. Chronic effects of Auramine dye include carcinogenicity, mutagenicity and its long term inhalation leads to pneumoconiosis.⁴ Malachite Green is multi-organ toxin which shows delayed toxicity. Rarely do these cases get referred to tertiary or teaching hospitals which add to the reason why synthetic cow dung poisoning is not reported in literatures. Animal and observational research confirms that Malachite Green is multi-organ toxin with delayed toxicity. Very few cases have been reported with Auramine poisoning while there are no references so far about Malachite Green poisoning.

The yellow powder causes GI irritation and damage to the mucosal membrane hence causing epigastric pain, vomiting and discomfort.

Acute exposure initially shows neurological features like seizures, non-specific muscle cramps, spasms, focal deficits and coma. Except for any primary focal neurological deficit, seizures are one of the deadly events caused by many poisons. The sudden onset of seizure episode in poisoning signifies the involvement of both the cerebral hemispheres. Direct CNS effect of the poison is clearly evident from the low GCS score of the patients. In our study we found neurotoxicity in the form of respiratory depression and seizures which is also observed in studies done by Hisham et al.¹

One male died due to cardiac arrhythmias which needs further evaluation for the correlation with toxicity profile of compound as it is not found in any studies done till date. Cardiotoxicity may be due to poison.

In all patients serum bilirubin and liver enzymes were normal till discharge as opposed to hepatotoxicity mentioned in the studies done by Hisham et al.¹

Our all patients had yellowish body discoloration but bilirubin and SGOT/SGPT were normal. Hence, the discoloration of skin could be due to deposition of powder in different parts of the body as observed by Krishnamoorthy et al.³

Conclusion:

Synthetic yellow cow dung powder poisoning was common in young age group and females. Vomiting, respiratory depression were common symptoms. Synthetic yellow cow dung powder poisoning needed only symptomatic treatment. It was very rare and mortality is low when treated promptly. Strict actions need to be taken on banning such toxic products which are sold in the market.

References:

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